

## A REMARKABLE AGGREGATION OF NYMPHES MYRMELEONIDES LEACH (NEUROPTERA: NYMPHIDAE) IN THE HUNTER VALLEY, NEW SOUTH WALES

C.N. SMITHERS

Research Associate, Australian Museum, P.O. Box A285, Sydney South, N.S.W., 2000

### Summary

A remarkable aggregation of adults of *Nymphes myrmeleonides* is reported from near Mt Royal, Hunter Valley, New South Wales.

### Introduction

Swarming aggregation is a widespread phenomenon in insects and there are probably many reasons for aggregation. It is most frequently assumed to be associated with mating (often without direct evidence) or with choice of habitat suitable for hibernation or aestivation. Monteith (1982), when discussing dry season aggregations of insects in monsoon forests, points out that all of the Hemiptera and Lepidoptera noted by him have chemical defences against predators, and suggests that aggregation in these species might enhance the effectiveness of these deterrents. In the Neuroptera itionids and hemerobiids have so far been reported to "aggregate" in Australia. Ithonids gather in protected situations from which they fly on mating flights (New 1991). Amongst Hemerobiidae, sluggish, hibernating *Micromus tasmaniae* (Walker) and *Drepanacra binocula* (Newman) can sometimes be found in large numbers by beating bunches of dead leaves in winter.

### Aggregation of *Nymphes myrmeleonides*

On 31st January, 1993, at Tuglo Wildlife Refuge, about 49km north of Singleton, near Mt Royal in the Hunter Valley, New South Wales, a massive aggregation of *Nymphes myrmeleonides* was observed in a patch of *Imperata cylindrica* (L.) Beauv. (blady grass). *N. myrmeleonides* is a large, well known lacewing, occurring in many habitats over eastern Australia (New 1981). The weather had been hot, very humid and overcast for some days, with intermittent, brief periods of sunshine. At the time of the observation the sky was clear. The stand of grass was small, about 20 m by 10 m, surrounded by mixed eucalypt forest of which the ground cover was largely the grass *Poa labillardieri* Steud. with a few other species of grass and a variety of small herbs. Hundreds of specimens of the insect, of both sexes, were on the leaves of the *I. cylindrica*. An estimate of the numbers present gave an average of about four or five per square metre. On being disturbed they flew up in great numbers, moved only a few metres and settled again. Males are known to have eversible odoriferous glands between the sixth and seventh abdominal sternites the products of which have been presumed to have significance in mating. In the light of Monteith's comments (Monteith 1982) noted above, it seems likely, however, that the glands could have a defensive function, as do the repugnatorial glands of chrysopids. Many males were inspected *in situ* but there was no sign of the glands being everted. There was no obvious factor

which might have been responsible for the gathering. Several other areas of similar habitat on the same property, some near the aggregation site, which were searched for *N. myrmeleonides* and swept with a net failed to produce any specimens. The aggregation appears to have been isolated.

Individuals of *N. myrmeleonides* have been recorded in flight at Tuglo from early February to early March (Smithers 1993). In Queensland (Rockhampton) Mackey (1988) reported it in flight a little earlier, from the second week in January to early March. Lambkin (in litt.) informs me that in Brisbane the flight period is from late December to early March. The aggregation at Tuglo seems, therefore, to have occurred at the beginning of its flight period there, which is much later than in southern Queensland. The lateness can be accounted for by the fact that at Tuglo, with an altitude of 750 m, the weather does not warm up until much later in the season. A week after the aggregation was seen the gathering had obviously dispersed, only two specimens being found at the same site, with occasional specimens being seen in other parts of the Refuge.

### References

- MACKEY, A.P. 1988. Phenology of some myrmeleontoid (Neuroptera) species from Rockhampton (Central Queensland). *Australian Entomological Magazine* 15: 87-90.
- MONTEITH, G.B. 1982. Dry season aggregations of insects in Australian monsoon forests. *Memoirs of the Queensland Museum* 20: 533-543.
- NEW, T.R. 1981. A revision of the Australian Nymphidae (Insecta: Neuroptera). *Australian Journal of Zoology* 29: 707-750.
- NEW, T.R. 1991. Chapter 34. Neuroptera (lacewings). Pp. 525-542. In: *The insects of Australia. A textbook for students and research workers*. Melbourne University Press: Carlton, Melbourne.
- SMITHERS, C.N. 1993. A note on the Megaloptera, Mecoptera and Neuroptera of Tuglo Wildlife Refuge, New South Wales. *Australian Entomological Magazine* 20: 67-71.